*New Revelations on Test Detection, P. 3*

**How A Report Disproving Dr. Teller Can Be "Released" and Kept Secret at the Same Time**

# I. F. Stone's Weekly

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# Better at Hiding Information Than At Hiding Tests

To move back from Geneva to Washington is to plunge into an altogether different atmosphere. Here the decision to resume testing can be seen ever more clearly as a political and domestic matter. It is painful to notice that as the date for resumption of testing draws near, only one member of Congress has suggested postponement. A few others—not many—may feel the same way, but they are silent. Frank Kowalski, Connecticut's Democratic Congressman-at-Large, the one professional Army officer in the House, a West Pointer and a Colonel, released a letter to the President April 12 suggesting—as India did in Geneva that same day—that we postpone resumption while negotiations are going on. "It would seem inconsistent," he wrote Mr. Kennedy, "to threaten the life of these negotiations by committing the very acts we are trying to outlaw at Geneva. . . . Your decision not to talk would assure the free people of the world that before God we are doing all that is humanly possible to promote peace and avoid spilling nuclear refuse upon all mankind and generations to come."

## A More Daring Leadership Required

Kowalski's lone voice merely emphasized the silence. It would take a President more daring and emotionally committed than John F. Kennedy has shown himself to be to step into this political void, and appeal to the better conscience of the country against the storm of protest and suspicion which a sudden order to stop would bring from the Republicans, the Southern oligarchy and the military-industrial complex. The best one hears from the unhappy liberals in the Kennedy entourage is that *after* a new test series, and only then, can the Administration afford to be more flexible about controls. The Russian refusal to permit *any* inspection even by the neutrals, does not make the Administration's task easier, and strengthens the suspicion that they, too, are not ready to talk seriously until after another round of their own.

What Geneva is discussing seems all the more irrelevant when seen from the perspective of Washington. Unfortunately a combination of diplomatic tact and inadequate information keeps the neutrals from breaking through into the realities. The whole question of underground testing has been exaggerated out of all proportion. At his press conference on March 29, Mr. Kennedy was asked about emphasis on inspection of underground tests since he himself had said at Palm Beach last winter that they did not particularly advance the art of weaponry. Mr. Kennedy replied lamely that he thought "underground tests potentially could be more rewarding than they have been in the past." It now appears that only a few days earlier a key Defense Department official, when questioned by the House Appropriations Committee, admitted that underground tests were of limited value and that one could never be sure of the results without a full-scale test, "and that takes the atmosphere." *

Unfortunately this expert testimony, released a week after the President's remark, was generally overlooked or ignored in the U.S. press and the neutrals at Geneva are unlikely to hear of it. We reprint important parts of it (see boxes on page three) because it contained this and two other admissions important in the current controversy over test detection. The witness was Dr. J. P. Ruina, who is in charge of the Defense Department's Advanced Research Projects Agency; his jurisdiction includes Project VELA, through which the U.S. is

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### Social Notes

**Since our last report Mr. Kennedy managed to attend two State dinners for and by the Shah of Iran and his Queen but found no time to see a delegation from the Women Strike for Peace which held a 24-hour vigil for a week outside the White House trying to talk with him nor to spare a moment for Miss Miyoko Matsubara and Mr. Hiromasa Hanafusa who came from Hiroshima on their way to Geneva.**

**The resplendent Shah brought the not unexpected news that he needed dollars quickly if he were to continue to support himself in the style to which U.S. aid and rich oil revenues, all somehow dissipated, had accustomed him. Miss Matsubara and Mr. Hanafusa brought messages of a different character, an appeal from 460,000 citizens of Hiroshima against resumption of testing.**

**All these visitors, humble and regal, had their scars to show. On the face of Miss Matsubara, who teaches at a school for the blind, are visible the skin grafts which are a relic of that day the mushroom cloud appeared over Hiroshima. The Queen of Iran, too, has suffered. The emerald and diamond crown she wore to the White House dinner is so heavy her head had to be protected with a padding of velvet and cotton. Mr. Hanafusa, whose parents were victims of the Hiroshima bombing when he was two, owes his survival to his grandmother, but at the age of four he began to help her by collecting old iron and copper in the streets, earning sometimes as much as 30 cents a day. The Shah also had a sad story; he told the National Press Club "this king business" had given him "nothing but headaches." No doubt the U.S. Treasury will keep the aspirin coming.**

*** Three years ago we called attention (the Weekly, June 8, 1959) to similar testimony by Dr. Shelton of the Armed Forces Special Weapons Project who objected that testing underground or in outer space provided "very little information on the main purpose of the weapon, that is, how to use it, and whether to use it, and what it will do." Then, as now, little attention was paid this testimony.**



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studying improved methods of detecting and identifying underground tests. Dr. Ruina's two other admissions were that atmospheric tests could be monitored "without actually putting stations within the other country" and that British studies showed, as he grudgingly put it, "some possibility that one can improve detection capabilities rather significantly." It is a pity so few people here or abroad will know of this testimony.

## "Information Men" At Work

A less candid picture was drawn for the Washington press corps last Thursday, April 12, when the State Department was thrown into a near panic by the proposal from Geneva for a temporary moratorium on testing while negotiations were underway. This originated with India, drew a Soviet agreement and was supported by many of the neutrals; Canada joined them in deploring resumption while talks were going on. But in the Department, as in most of U.S. press coverage, this was presented solely as a Soviet proposal, and steps were taken by "information officers" to counter the news from Geneva. These steps are so typical they deserve fuller description.

First of all the press was allowed to report "the thinking of U.S. officials"—this was the dictated phrase. How, where and just when this "thinking" was obtained, whether by telepathy, osmosis, divination, palmistry or necromancy cannot be divulged; this is the old not-for-attribution but please-use-it device. Suffice it is to say that the "thinking" was so discouraging about the possibilities of detection that it was even suggested one could not be sure of detecting atmospheric tests without an international network! Fortunately the process of transmitting this thinking provoked so many embarrassing questions and disclosed so many contradictions that little if any trace of these disembodied cogitations could be found in the next day's newspapers.

The second step taken was the release of a report on "The Detection and Identification of Underground Nuclear Explosions" by the U.S. Arms Control and Disarmament Agency.

### While We Talk Disarmament

**"In this bill, peacetime appropriations for Defense have again reached a new high as a result of new or enlarged programs to increase our military strength. . . . The Dept. of Defense reports that longer range programs proposed in this area [strategic retaliatory forces] will provide by 1967 a force of over 700 B-58 and B-52 bombers equipped with HOUND DOG and SKYBOLT missiles, well over 1,000 land-based ICBM's, and 41 submarines with more than 650 POLARIS missiles abroad. It is also reported that the alert portion of this force alone will have three times the destructive capability of the alert force we had in June 1961. . . . The Air Force will keep one-half of its strategic bomber force on 15-minute ground alert during fiscal 1963. . . . One area, chemical and biological warfare weapons, has been allocated an approximate increase of four times the amount provided in the current fiscal year."**

*—From the Appropriations Committee report to the House on the 1963 Defense Dept. budget, April 13.*

This marked another of the occasions on which this Agency, which is supposed to be working militantly for disarmament, has been used by the State Department to make propaganda discouraging disarmament negotiations. This on-the-record report fell as flat as the off-the-record "thinking" but I hope that independent scientists, particularly seismologists, will write the agency for a copy so they can analyze it for themselves. It could hardly have been more pessimistic if written by Dr. Teller himself. On page 4, for example, it agrees with Dr. Teller that even at the best the location of a suspicious seismic event could only be made within "about 10 kilometers" or six and a quarter miles. Coast and Geodetic found, to the contrary, in a still undisclosed study of Project Gnome that travel time curves could be drawn to locate the explosion within several tenths of a mile. The report says on page eight that there is no technique "which would permit the identifica-

## Senator Clark Warns Senate Badly Needs Preparation for Disarmament Treaty

**"Two of the great powers have recognized that the key to practical disarmament cannot await the solution of political problems. 'Efforts should continue without interruption until agreement upon the total (disarmament) program has been achieved,' read the US-USSR Joint Statement of Sept. 1961. But their deeds do not match their words. . . .**

**"In Congress and throughout the country we have failed to readjust our thinking about disarmament to make it comport with the basic new fact of international life: Two great powers have the present capability of destroying civilization. And either of them might do it through accident as easily as by design. . . .**

**"The Senate, even today is badly informed on the President's disarmament policy. An incident during last week's debate on the UN bond issue illustrates the point. A press story indicated that our delegation in Geneva would submit a plan that called 'for the elimination of national armies within nine years.' The statement differed little from those of the President I have quoted. Yet a Senator drew attention to this article in obvious surprise and alarm. Another Senator, a noted supporter of the President, said that he 'had never heard anybody on the floor of the Senate, or, for that matter, in this country, make a declaration going that far, which would seek to abandon our own national forces.' Regretfully—as a reading of the Congressional Record of April 5 will show—this unfamiliarity is not the sole property of these two men.**

**"There are a number of reasons for this. First disarmament matters are extremely complex and are diffused among a number of overburdened committees. The Senate Committees on Foreign Relations, Appropriations, Aeronautical and Space Sciences, and Armed Services all have jurisdiction as does the Joint Committee on Atomic Energy. Disarmament to each of these is a different, and sometimes secondary, problem. Committees occupied with determining how large our arsenal should be—whose daily currency is testimony from members of the industrial-military complex of which President Eisenhower warned—are not apt to regard highly their function as disarmament policy advisers. . . .**

**"May we not be heading for another Versailles? Is the Congress being prepared to 'advise and consent' to a meaningful disarmament treaty? I fear not, and, more important perhaps, does the country understand what the Administration is up to? Again I fear the answer must be negative. Is not the conclusion that if disarmament should become diplomatically possible, it would nonetheless fail for want of Congressional approval? As of today, I fear the answer is yes. . . .**

**"In the end, much depends on the American people themselves. The incentive . . . must come from the grass roots of public opinion."**

*—Senator Clark (D.Pa.) to the American Academy of Political Science in Philadelphia, April 13.*

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tion of underground nuclear explosions by remote means alone" but fails to explain how then the U.S. so quickly identified the underground Soviet nuclear test of Feb. 2. Indeed there is no mention of this embarrassingly efficient affair in the report, and attempts to probe "thinking" on the subject in the aforementioned press trance only evoked annoyance.

### Dr. Teller's "Big Hole Again

The report came up again with Dr. Teller's "big hole" nightmare. It said "the strength of the emitted wave does not give a clear indication of the yield since variations in the soil or rock surrounding the explosion or in the size of the cavity in which the bomb is placed can alter the magnitude of the seismic oscillations by factors of several hundred." This is phrased with lawyer-like skill to give the unwary reader the impression that the Teller-Latter "big hole" theory of concealment is a proven fact but in so disingenuously phrased a fashion that it can be defended against the more sophisticated as not literally incorrect. It so happens that the very day this report was released another report, the first on Project Gnome, was supposed to become available at the Office of Technical Services in the Department of Commerce. This second report dated Dec. 10 but released April 12 for the first time documented just how strikingly incorrect the Teller-Latter theory turned out to be in this, its first nuclear tryout.

To high-light the significance of this and the efficiency with which the government hides information, I want to quote what eight scientists said of this in their answer to Dr. Teller in the *Saturday Evening Post* for April 14. They wrote:

**Dr. Teller has repeatedly attempted to 'prove' that the Russians could easily conceal underground nuclear tests. A couple of months ago a remarkable experiment, Project Gnome, was conducted by a laboratory recently headed by Dr. Teller. A small 5-kiloton shot—one-fourth the size of the Hiroshima bomb—was fired deep in a bed of salt, material supposed to muffle and conceal underground bomb tests. Contrary to predictions, this salt-bed shot was picked up and identified as an underground explosion as far away as Finland and Japan. Based on published reports one would estimate the muffling factor to be at least 10 times smaller than the factor quoted by Teller in his articles.**

*(Continued on Page Four)*

## What the British Did on Detection

**Mr. [Dan'l J.] FLOOD (D. Pa.): You still have not made clear to me what is the gimmick or the gadget that the British have come up with which makes Macmillan so optimistic [on test detection].**

**Dr. J. P. RUINA [Director of Defense Dept's ARPA which is in charge of test detection research]: I will see if I can explain that.**

**Mr. FLOOD: Is it hardware?**

**Dr. RUINA: It is a collection of hardware. They have an array of seismometers, 24 seismometers.**

**Mr. FLOOD: This is not some sort of Rube Goldberg thing?**

**Dr. RUINA: No, it is not a Rube Goldberg thing. It is the use of 24 elements of an array. The array is lined up. Each seismometer detects the signal. Then you collect these signals and handle the data in such a way that the sum of the signals, using all 24, gives you a sensitivity which is 24 times as large as any individual one. The usual, at least the accepted theory for how one can handle these data is such that you would get an improvement if you used 24 seismometers, by a factor of the square root of 24, which is more like 5. The British have a technique by which they feel, on a very early and preliminary basis, the improvement might be five times better than what we thought it would be. Therefore, their sensitivity for detecting nuclear explosions is greater than we thought it would be.**

*—Hse. Approp. Com. Hearings 1963 Defense Dept. budget, Part 5, pps. 116-117 released April 7.*

## Three Striking Admissions About Test Detection No U.S. Newspaper Published

**Mr. [Dan'l J.] FLOOD (D. Pa.): What is your comment upon Khrushchev's recent statement that most of this detection is nonsense because they have, and he takes for granted we have, adequate hardware to do any detection above the ground or below the ground or in the atmosphere which is necessary? What is all the shooting about? Do you believe him? Do you think he has? We obviously do not. So where does that leave us?**

**Dr. [J. P.] RUINA [Director, ARPA Advanced Research Projects Agency which includes VELA, the project for improvement in test detection techniques]: The issue in test detection we can divide into two parts basically. One is the question of atmospheric tests, and the other is the underground tests. In the ARPA program we are not concerned with atmospheric tests because we, too, believe that the capability this country has, as well as the USSR, to detect atmospheric tests is quite adequate. YOU CAN DO THIS WITHOUT ACTUALLY PUTTING IN STATIONS WITHIN THE OTHER COUNTRY.**

**On the question of underground tests, the sensitivity of the methods of underground test detection are far lower than the sensitivity of amospheric test detection. There is no radioactivity to check. There is no sampling of the air that you can use.**

**Mr. FLOOD: Macmillan seemed to be satisfied the British have solved the problem. Why are you so unhappy about it?**

**Dr. RUINA: I do not think it is as simple as one solving the problem and the other not solving the problem. I think there is no basic disagreement on the technical level between the U.S. and the USSR [sic] as to what the capability is.**

**Mr. FLOOD: What about Macmillan's observation about the British breakthrough on the ability to detect subsurface explosions?**

**Dr. RUINA: There have been very recent British studies which are subject to a variety of implications, which indicate there is some possibility that ONE CAN IMPROVE DETECTION CAPABILITIES RATHER SIGNIFICANTLY WITH SOME NEW TECHNIQUES.**

* * *

**Mr. Wm. E. Minshall (R. Ohio): Would you tell me, please, as a layman, what are the advantages and disadvantages of underground testing as compared to atmospheric testing?**

**Dr. RUINA: . . . There are two major reasons for testing. One is for testing new bomb devices, and the other is for learning about nuclear effects, explosion effects. If you want to learn about explosion effects—for example, what effect a nuclear explosion with a certain overpressure would have on a TITAN silo, let us say, or if you want to learn about whether a particular material could be used for an antenna in the area of a nuclear explosion, that sort of thing cannot be done underground. FOR THE EXPLOSION EFFECTS YOU MUST TEST IN THE ATMOSPHERE.**

**For actual bomb devices, I am told one can test some things underground on a small scale, BUT ONE IS NEVER SURE UNTIL HE HAS A FULL-SCALE TEST, AND THAT TAKES THE ATMOSPHERE.**

*—Dept. of Defense 1963 Budget, Hearings Before House Appropriations Com. Pt. 5, Research, pps. 114-15. Executive Session, March 20, released April 7. Emphasis added.*



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# Not Secret, "Released", Priced at $2 But Not For Sale!

*(Continued from Page Three)*

The new report on Project Gnome shows that the use of salt *did not muffle the shot at all but magnified it!* If the scientists will get this report (PNE-110P), "Seismic Waves From An Underground Explosion In A Salt Bed" prepared for the AEC by the Coast and Geodetic Survey they will see that while Dr. Teller predicted that explosion in salt would muffle the shot by a factor of three—it turned out that in fact it magnified the effects by a factor of four.* Instead of being reduced by two-thirds, in other words, they were multiplied by four! Detection turned out to be easier not more difficult.

## Techniques of Concealment

Unfortunately the government's techniques for concealing information are better than Dr. Teller's theories about how to conceal underground tests. In tracking down this first of several reports on Project Gnome, I found various techniques for concealment at work. In the first place, while seismology is not supposed to be classified, the same effect is achieved by getting the civilian Coast and Geodetic Survey to work on contract for the Air Force and the AEC; the Survey is forbidden by the terms of the contract to make these reports public; release depends on the "contractor." In the second place, even when a report is released, it is done so secretly that few know about it. No information officers drew attention to this one; it was only by accident that I learned of the report a few days after its supposed public release. In the third place, when I went to buy myself a copy at the announced price of $2 in the Department of Commerce Office of Technical Services I was told it could not be purchased, even though unclassified, because some unnamed agency had sent through a note saying "No information released for public distribution." How I obtained a copy nevertheless is another story but a day later, checking by telephone at the AEC to ask when it would release the two other Coast and Geodetic reports I have been looking for and writing about, I was offered a free copy of this one. The other two reports deal (1) with the monitoring by 90 foreign stations of Project Gnome and (2) with Coast and Geodetic's monitoring of our own recent underground test series. These are still being withheld, perhaps until after the Geneva talks are over or testing safely begins. Such are a reporter's pastimes in this open society of ours.

*April 18, 10 a.m.*

*** This may also be seen from the magnitude given in the new report. While it gives the earthquake magnitude of the comparable 5-kiloton Logan shot in tuff as 4.5 (many seismologists, including Romney, Johnson and Press have said only 4.4), it declares "the estimated magnitude of the GNOME shot was from 4.6 to 5.0, depending on the choice of data." The significance of this can be seen from the fact that 4.75, which the U.S. equates with 19 kilotons, was supposed to be the threshold below which detection would not be reliable. This 5 kiloton shot gave a signal whose range went considerably higher than what had earlier been expected from 20 kilotons. I was told privately, in fact, that the seismologists were so sure Dr. Teller was right that they adjusted their equipment for so small a signal that the actual signal when it came went literally off the record—it was so much larger than expected.**

## Mr. Kennedy v. Mr. Blough

**We applaud the energy with which the President and his advisers forced Roger M. Blough of U.S. Steel to rescind his $6-a-ton price increase, but note how quickly this was followed by inspired stories assuring the steel industry that the Administration had no intention of following through by doing anything fundamental about it. Mr. Kennedy acted as an affronted conservative anxious to hold the price-wage line, not as a potential radical.**

**The heart of the issue may be reached by starting with a statement an unnamed steel executive "grimly" gave the Wall St. Journal (April 16) saying Presidential power used in this way could create "a controlled economy — which means nothing but administered prices." Administered prices have been the rule in the steel industry, as Senator Kefauver's anti-trust inquiries have demonstrated. The real question is who shall set these administered prices—the private commissars of the steel trust, or a public body. Senator Gore has made several proposals for protecting the public interest in this process, but there seems little chance the Administration will support him. Without some basic reform, prices will rise to suit the steel moguls; the President cannot intervene very often.**

**This seems to us a good occasion to recall that Mr. Blough, whose readiness to subordinate private profit to public interest has now been demonstrated, remains one of the advisers to the new Arms Control and Disarmament Agency. We suspect his passion for disarmament is not unbridled.**

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